

**AMENDMENTS TO THE CLAIMS:**

1. **(Previously Presented)** An isolated polynucleotide molecule comprising:  
a nucleotide sequence encoding exon 1d of the human vitamin D receptor (VDR) gene, or a complement thereof.

2. **(Previously Presented)** A polynucleotide molecule according to claim 1, wherein said nucleotide sequence further comprises:

- i) a nucleotide sequence encoding an amino acid sequence of exon 1b, or a complement thereof;
- ii) a nucleotide sequence encoding an amino acid sequence of exon 1c, or a complement thereof;

or

- iii) a nucleotide sequence comprising i) and ii).

3. **(Previously Presented)** A polynucleotide molecule according to claim 1, wherein the nucleotide sequence includes, from 5' to 3':

(i) a sequence encoding an amino acid sequence of exons 1d, 1c and 2-9 so as to encode a VDR isoform of approximately 477 amino acids, or a complement thereof;

(ii) a sequence encoding an amino acid sequence of exons 1d and 2-9 so as to encode a VDR isoform of approximately 450 amino acids, or a complement thereof; or

(iii) a sequence encoding an amino acid sequence of exons 1d and 2-9 and further includes a 152bp intronic sequence so as to encode a truncated VDR isoform of approximately 72 amino acids, or a complement thereof.

4. **(Previously Presented)** A polynucleotide molecule according to claim 1, wherein the polynucleotide comprises a nucleotide sequence encoding an amino acid sequence encoded by SEQ ID NO:2, SEQ ID NO:3 or SEQ ID NO:4, or a complementary sequence thereof.

5. – 8. **(Canceled)**

9. **(Previously Presented)** A plasmid or expression vector comprising a polynucleotide molecule according to claim 1.

10. **(Original)** A host cell transformed with a polynucleotide molecule according to claim 1 or a plasmid or expression vector according to claim 9.

11. **(Original)** A host cell according to claim 10, wherein the cell is a mammalian cell.

12. **(Original)** A host cell according to claim 10, wherein the cell is a NIH 3T3 or COS 7 cell.

13. **(Currently Amended)** A method of producing a polypeptide comprising exon 1 d of a human vitamin D receptor (VDR), the method comprising:

culturing a host cell of claim 10, wherein said polynucleotide molecule encodes a polypeptide comprising exon 1d of a human VDR, said culturing being under conditions enabling the expression of the polynucleotide molecule to produce a polypeptide ~~comprising exon 1d of the VDR or VDR isoform polypeptide~~ and, optionally, recovering the polypeptide .

14. **(Previously Presented)** A method according to claim 13, wherein the polypeptide is expressed onto the host cell membrane or a sub-cellular compartment.

15. – 18. **(Canceled)**

19. **(Currently Amended)** An oligonucleotide or polynucleotide probe comprising a nucleotide sequence ~~of 10 or more consecutive nucleotides of a nucleotide sequence~~ having greater than 75% sequence identity to a polynucleotide encoding MEWRNKKRSDWLSMVLRTAGVE (SEQ ID NO:21), or a complement thereof.

20. **(Previously Presented)** An antisense polynucleotide molecule comprising a nucleotide sequence having greater than 75% sequence identity to a complement of a polynucleotide encoding MEWRNKKRSDWLSMVLRTAGVE (SEQ ID NO:21).

21. **(Previously Presented)** An isolated polynucleotide molecule comprising a nucleotide sequence having greater than 75% sequence identity to a polynucleotide encoding MEWRNKKRSDWLSMVLRTAGVE (SEQ ID NO:21), or a complement thereof.

22. **(Previously Presented)** An isolated polynucleotide molecule comprising a nucleotide sequence having greater than 85% sequence identity to a polynucleotide encoding MEWRNKKRSDWLSMVLRTAGVE (SEQ ID NO:21), or a complement thereof.

23. **(Previously Presented)** An isolated polynucleotide molecule comprising a nucleotide sequence having greater than 95% sequence identity to a polynucleotide encoding MEWRNKKRSDWLSMVLRTAGVE (SEQ ID NO:21), or a complement thereof.

24. **(Previously Presented)** An isolated polynucleotide molecule comprising a nucleotide sequence of

5'GTTTCCTTCTTCTGTCGGGGCGCCTTGGCATGGAGTGGAGGAATAAGAAAAGGAG  
CGATTGGCTGTCGATGGTGCTCAGAACTGCTGGAGTGGAGG3' (SEQ ID NO:1), or a  
complement thereof.

25. – 26. **(Canceled)**

27. **(Previously Presented)** An isolated polynucleotide molecule comprising a nucleotide sequence of nucleotide residues 30-95 of SEQ ID NO:1, or a complement thereof.

28. **(Currently Amended)** An isolated polynucleotide molecule comprising a nucleotide sequence encoding a human vitamin D receptor (hVDR) isoform, ~~said polynucleotide molecule comprising a nucleotide sequence encoding~~ comprising the amino acid sequence MEWRNKKRSDWLSMVLRTAGVE (SEQ ID NO:21), or a complement of said nucleotide sequence thereof.

29. **(Canceled)**

30. **(Previously Presented)** A plasmid or expression vector including a polynucleotide molecule according to claim 21, 22, 23, 24, 27 or 28.

31. **(Previously Presented)** A recombinant host cell containing a polynucleotide molecule according to claim 21, 22, 23, 24, 27 or 28.

32. **(Previously Presented)** A recombinant host cell containing a plasmid or expression vector according to claim 30.

33. **(Previously Presented)** A host cell according to claim 32, wherein the cell is a mammalian cell.

34. **(Previously Presented)** A host cell according to claim 32, wherein the cell is a NIH 3T3 or COS 7 cell.

35. **(Currently Amended)** A method of producing a VDR or VDR isoform polypeptide-  
comprising

culturing a host cell comprising a plasmid or expression vector comprising a polynucleotide molecule encoding a human vitamin D receptor (VDR) or VDR isoform, said polynucleotide molecule comprising the nucleotide sequence of a polynucleotide molecule according to claim 21, 22, 23, 24, 24 or 28, said polynucleotide molecule encoding MEWRNKKRSDWLSMVLRTAGVE (SEQ ID NO:21), said culturing being under conditions enabling the expression of the VDR or VDR ~~isoform~~ isoform; and,

optionally, recovering the VDR or VDR isoform polypeptide.

36. **(Previously Presented)** A method according to claim 35, wherein the VDR or VDR isoform polypeptide is expressed onto the host cell membrane or other sub-cellular compartment.

37. **(Previously Presented)** A polynucleotide molecule according to claim 21, wherein said nucleotide sequence further comprises:

- i) a nucleotide sequence encoding an amino acid sequence of exon 1b of the human vitamin D receptor (VDR) isoform, or a complement thereof;
- ii) a nucleotide sequence encoding an amino acid sequence of exon 1c of the human VDR isoform, or a complement thereof; or
- iii) a nucleotide sequence comprising i) and ii).

38. **(Previously Presented)** A polynucleotide molecule according to claim 21, wherein the nucleotide sequence comprises, from 5' to 3':

- (i) a sequence encoding an amino acid sequence of exons 1d, 1c and 2-9 of the human vitamin D receptor (VDR) isoform so as to encode a VDR isoform of approximately 477 amino acids, or a complement thereof,
- (ii) a sequence encoding an amino acid sequence of exons 1d and 2-9 of the human VDR isoform so as to encode a VDR isoform of approximately 450 amino acids, or a complement thereof, or
- (iii) a sequence encoding an amino acid sequence of exons 1d and 2-9 of the human VDR isoform and further includes a 152bp intronic sequence so as to encode a truncated VDR isoform of approximately 72 amino acids, or a complement thereof.

39. **(Previously Presented)** A polynucleotide molecule according to claim 22, 23, or 24, wherein said nucleotide sequence further comprises:

- i) a nucleotide sequence encoding an amino acid sequence of exon 1b of the human vitamin D receptor (VDR) isoform, or a complement thereof;
- ii) a nucleotide sequence encoding an amino acid sequence of exon 1c of the human VDR isoform, or a complement thereof; or
- iii) a nucleotide sequence comprising i) and ii).

40. **(Previously Presented)** A polynucleotide molecule according to claim 22, 23, or 24, wherein the nucleotide sequence comprises, from 5' to 3':

(i) a sequence encoding an amino acid sequence of exons 1d, 1c and 2-9 of the human vitamin D receptor (VDR) isoform so as to encode a VDR isoform of approximately 477 amino acids, or a complement thereof,

(ii) a sequence encoding an amino acid sequence of exons 1d and 2-9 or the human VDR isoform so as to encode a VDR isoform of approximately 450 amino acids, or a complement thereof, or

(iii) a sequence encoding an amino acid sequence of exons 1d and 2-9 of the human VDR isoform and further includes a 152bp intronic sequence so as to encode a truncated VDR isoform of approximately 72 amino acids, or a complement thereof.

41. **(Currently Amended)** An oligonucleotide or polynucleotide probe comprising a nucleotide sequence of ~~10 or more consecutive nucleotides of a nucleotide sequence~~ having greater than 85% sequence identity to a polynucleotide encoding MEWRNKKRSDWLSMVLRTAGVE (SEQ ID NO:21), or a complement thereof.

42. **(Currently Amended)** An oligonucleotide or polynucleotide probe comprising a nucleotide sequence of ~~10 or more consecutive nucleotides of a nucleotide sequence~~ having greater than 95% sequence identity to a polynucleotide encoding MEWRNKKRSDWLSMVLRTAGVE (SEQ ID NO:21), or a complement thereof.

43. **(Currently Amended)** An oligonucleotide or polynucleotide probe comprising a nucleotide sequence of ~~10 or more consecutive nucleotides of a nucleotide sequence of~~

5'GTTTCCTTCTTCTGTCGGGGCGCCTTGGCATGGAGTGGAGGAATAAGAAAAGGAGCGATTGGCTGTCGATGGTGCTCAGAACTGCTGGAGTGGAGG3' (SEQ ID NO:1), or a complement thereof.

44. **(Currently Amended)** An oligonucleotide or polynucleotide probe comprising a nucleotide sequence of ~~10 or more consecutive nucleotides of a nucleotide sequence~~ encoding MEWRNKKRSDWLSMVLRTAGVE (SEQ ID NO:21), or a complement thereof.

45. **(Previously Presented)** An antisense polynucleotide molecule comprising a nucleotide sequence having greater than 85% sequence identity to a complement of a polynucleotide encoding MEWRNKKRSDWLSMVLRTAGVE (SEQ ID NO:21).

46. **(Previously Presented)** An antisense polynucleotide molecule comprising a nucleotide sequence having greater than 95% sequence identity to a complement of a polynucleotide encoding MEWRNKKRSDWLSMVLRTAGVE (SEQ ID NO:21).

47. **(Previously Presented)** An antisense polynucleotide molecule a nucleotide sequence complementary to a nucleotide sequence of

5'GTTTCCTTCTTCTGTCGGGGCGCCTTGGCATGGAGTGGAGGAATAAGAAAAGGAG  
CGATTGGCTGTCGATGGTGCTCAGAACTGCTGGAGTGGAGG3' (SEQ ID NO:1).

48. **(Previously Presented)** An antisense polynucleotide molecule comprising a nucleotide sequence complementary to a nucleotide sequence encoding MEWRNKKRSDWLSMVLRTAGVE (SEQ ID NO:21).